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SIXTH MONTHLY PROGRESS REPORT

December 20, 1965

Contract No.

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I. SUMMARY

During the preceding month of November 1965, progress continued in the following task areas:

1. Miniature Recorder Development
2. Animal Training Facilities Directory

Progress is on schedule in each of these areas.

II. PROGRESS ON TASKS

A. Miniature Recorder

Analysis of the results thus far in the experimentation with photo-sensitive filaments as the basis for a miniaturized sound recorder has progressed to a point where feasibility has been established and future development necessitates further programming. A three-phase program is envisioned as the logical approach to development leading up to a prototype design.

1. Standardization of Emulsion and Coating Procedure

A known emulsion speed and its control are essential to the response, recording and resolution of readout for both test and operating purposes. A solution to the problem of developing an emulsion having consistent and uniform properties will require further experimentation. The services of an emulsion consultant would expedite development of this particular phase.

2. Refinement of Recorder

Further development and refinements in the equipment and procedures for the recording mechanism, light modulation, filament handling and emulsion development are required prior to prototype design. A combination laboratory and darkroom and some specialized equipment would be required for this phase.

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3. Readout Equipment Development

An experimental apparatus designed to permit recognizable readout is necessary for system testing and identification of unexpected requirements. Design and fabrication of this equipment can be restricted to that sufficient only to provide meaningful measurements.

Efforts during the past month have also been devoted to a preliminary evaluation of the feasibility of employing a magnetic substance coating of the 15 denier nylon monofilament by a process similar to that employed for the photographic emulsion. Contacts have been made with suppliers of magnetic iron oxides and materials are currently on hand for the initial tests.

Three distinct advantages are apparent in the employment of a magnetic process as opposed to a photographic recording process. A magnetic system would permit immediate playback, negate photo processing facility requirements, and expedite development by drawing from the readily-available technology in this area.

B. Animal Training Facilities Directory

Progress in this task area is essentially complete with the delivery of three compilations of the following descriptions.

1. Catalogue of Trainers and Facilities (Consumers Guide)

This item contains the identification of six species of animals, including the cat, dog, pigeon, crow, starling, and marine mammals, cross-indexed by behavioral scientists, trainer, performer acts, exhibitor, and supplier (non-breeder). Selected texts on the training and care for each of the foregoing species are referenced in the catalogue.

A complete dossier on the cat was included as a sample to illustrate one method of presenting ready-reference material.

2. Directory of Commercially available Animals

Ninety-nine Animal species, seventy bird species, twenty-eight reptiles and amphibians and ten miscellaneous forms of wild life are identified as to a known source for procurement within the continental United States.

3. Uniterm (Index to a Bibliography of Animal Characteristics, Behavior, and Physiology)

This system is designed to index a relatively small quantity (up to 2000) of bibliographical citations in the area of interest. The Uniterm consists of thirty-nine subjects relating to animal characteristics, behavior and physiology indexed to the literature of 341 animals noted as authorities in this field.

III. PLANS FOR COMING MONTH

A. Miniature Recorder

Investigate various materials, methods and techniques for magnetic substance coating of a 10-denier nylon monofilament. Conduct improved test procedures to ascertain the potential recording and playback capabilities of the coated monofilament.

B. RF and Optical

Complete analysis of the parameters and constraints relating to } Investigate proposed systems through refinement of the foregoing.

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IV. ADMINISTRATION AND COSTS

For the period 30 April to 30 November, 1965, a total of \$ [] has been expended (representing 61% of contract funds). Total percentage of contract completion is estimated as 61% as of 30 November, 1965.